

**SUPPLEMENTAL
Notice of Allowability**

Application No.

10/689,781

Examiner

RANDOLPH CHU

Applicant(s)

OWADA, MITSURU

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the phone interview on 5/27/09.
2. ☒ The allowed claim(s) is/are 2-4, 8, 10, 11, 14-16, 19, 21, 22 and 86-91 (now renumbered to 1-18).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20090527.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Brian P. Werner/
Supervisory Patent Examiner, Art Unit 2624

DETAILED ACTION

Examiners Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiners amendment was given in a telephone interview with Frank Cire (Reg. No. 42,419) on 5/27/2009.

Claims 2, 14 and 22 are replaced with:

2. (Currently amended) A decoding method of decoding encoded image data which has been hierarchically encoded in advance by a discrete wavelet transform method, comprising:

using a processor to perform the following:

determining a size of an image to be output;

judging a minimum number of layer/layers of hierarchy needed to obtain a decoded image of size equal to or exceed the determined size;

determining whether the minimum number of layer/layers of hierarchy corresponds to all the layers of hierarchy of the encoded image data;

decoding, if the determination proves true, all the layers of hierarchy of the encoded image data, and otherwise decoding the encoded image data up to a layer of hierarchy which is one or more layers higher than the minimum number of layer/layers of hierarchy; and

reducing the size of the decoded image to the determined size,
wherein , in said judging step, the number n satisfies a condition of

$$\frac{1}{2^n} \geq S_{out}/S_{in} > \frac{1}{2^{(n+1)}}$$

where S_{out} is an output image size, and S_{in} is the input image size, n is an integer equal to or greater than 1, and is judged as the minimum number of layer/layers of hierarchy, and in said decoding step, image data is decoded up to a hierarchy until an input-output ratio of image size becomes

$$1/2^{(n-1)}.$$

14. (Currently amended) An encoding method of hierarchically encoding image data ~~A decoding method of decoding encoded image data which has been hierarchically encoded in advance~~ by a discrete wavelet transform method, comprising:
using a processor to perform the following:
determining a size of an image to be outputted;
judging a minimum number of layer/layers of hierarchy needed to obtain a decoded image of size equal to or exceed the determined size;
determining whether the minimum number of layer/layers of hierarchy corresponds to all the layers of hierarchy to which ~~of the encoded~~ image data can be encoded; and
encoding ~~decoding~~, if the determination proves true, all the layers of hierarchy of the ~~encoded~~ image data, and otherwise encoding the ~~decoding~~ the

~~encoded~~ image data up to a layer of hierarchy which is one more layer ~~or more layers~~
higher than the minimum number of layer/layers of hierarchy,; ~~and~~

~~reducing the size of the decoded image to the determined size,;~~

wherein, in said judging step, the number n satisfies a condition of

$$\frac{1}{2^n} \geq S_{out}/S_{in} > \frac{1}{2^{(n+1)}}$$

where S_{out} is an output image size, and S_{in} is the input image size, n is an integer equal to or greater than 1, and is judged as the minimum number of layer/layers of hierarchy, and

wherein, in said encoding step, image data is decoded up to a hierarchy until an input-output ratio of image size becomes

$$\frac{1}{2^{(n-1)}} \left[\frac{1}{2^{(n+1)}} \right].$$

22. (Currently amended) An encoding apparatus for hierarchically encoding an image, comprising:

a first determination unit that determines a size of an image to be outputted;

a judging unit that judges a minimum number of layer/layers of hierarchy needed to obtain a decoded image of size equal to or exceed the determined size;

a second determination unit that determines whether the minimum number of layer/layers of hierarchy corresponds to all the layers of hierarchy to which the image data can be encoded;

an encoding unit that, if the determination proves true, encodes all the layers of hierarchy of the image data, and otherwise encodes the image up to a layer of hierarchy which is one or more layers higher than the minimum number of layer/layers of hierarchy; and

reducing the size of the decoded image to the determined size,

wherein, in said judging step, the number n satisfies a condition of

$$\frac{1}{2^n} \geq \text{Sout/Sin} > \frac{1}{2^{(n+1)}}$$

where Sout is an output image size, and Sin is the input image size, n is an integer equal to or greater than 1, and is judged as the minimum number of layer/layers of hierarchy, and

wherein, in said encoding step, image data is decoded up to a hierarchy until an input-output ratio of image size becomes

$$1/2^{(n-1)} \ll 1/2^{(n+1)}.$$

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randolph Chu whose telephone number is 571-270-1145. The examiner can normally be reached on Monday to Thursday from 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on 571-272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RIC/

/Brian P. Werner/
Supervisory Patent Examiner, Art Unit 2624